

D E C L A R A T I O N

In the matter of U.S. Patent  
Application Ser. No. 09/886,213  
in the name of Yuji MATSUYAMA et  
al.

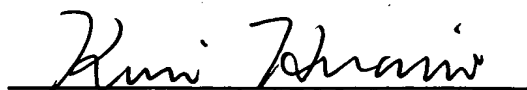
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that I am thoroughly conversant with both the Japanese  
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that the attached document represents a true English  
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I further declare that all statements made herein of  
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Dated: February 26, 2004

  
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[Title of Invention]      TREATMENT APPARATUS

[Claims]

[Claim 1]

A treatment apparatus, comprising:

a casing;

a heating and mounting table, which is provided in said casing, capable of heating a substrate mounted thereon to a predetermined temperature;

a hoisting and lowering member, which is provided on said heating and mounting table, capable of hoisting and lowering a substrate supported thereon; and

a cooling and mounting table, which is provided in said casing, capable of cooling a substrate mounted thereon to a predetermined temperature,

said cooling and mounting table being constructed so as to be capable of receiving the substrate mounted on said hoisting and lowering member.

[Claim 2]

The treatment apparatus as set forth in claim 1,

wherein said casing has a substrate carrying-in opening and a substrate carrying-out opening for carrying a substrate into/out of said treatment apparatus, respectively, said heating and mounting table is capable of mounting a substrate carried into the treatment apparatus from the substrate carrying-in opening, and said cooling and mounting table is constructed so as to be capable of moving the substrate from the substrate carrying-in opening to a position where the substrate can be carried out of the treatment apparatus.

[Claim 3]

The treatment apparatus as set forth in claim 1,

wherein said casing has a substrate carrying-in/out opening for carrying a substrate into/out of the treatment apparatus, said heating and mounting table is capable of mounting the substrate carried into the treatment apparatus from the substrate carrying-in/out opening, and said cooling and mounting table is constructed so as to be capable of moving the substrate

from the substrate carrying-in/out opening to a position where the substrate can be carried out of the treatment apparatus.

[Claim 4]

The treatment apparatus as set forth in any one of claims 1 to 3,  
wherein a notch section is formed in said cooling and mounting table in a manner not to touch the hoisting and lowering member.

[Claim 5]

The treatment apparatus as set forth in any one of claims 1 to 4,  
wherein said heating and mounting table can be covered by a cover in the casing.

[Claim 6]

The treatment apparatus as set forth in any one of claims 1 to 5,  
wherein a member for intercepting a hot atmosphere is disposed between said heating and mounting table and said cooling and mounting table.

[Claim 7]

The treatment apparatus as set forth in any one of claims 1 to 6,  
wherein a passage, in which a temperature-controlled fluid flows, is formed in said cooling and mounting table.

[Claim 8]

The treatment apparatus as set forth in any one of claims 1 to 6,  
wherein said cooling and mounting table is provided with Peltier elements.

[Background of the Invention]

[0001]

[Field of the Invention]

The present invention relates to a treatment apparatus comprising a heating and mounting table for performing heat treatment of a substrate and a cooling and mounting table for performing cooling treatment of a substrate.

[0002]

[Description of the Related Art]

For example, in photo-resist treatment in a process of semiconductor device

fabrication, a substrate such as a semiconductor wafer (referred to as a "wafer" hereinafter) is under exposing treatment, a heat treatment, a cooling treatment, and a development treatment in that order. Conventionally, a coating and developing system is used for such treatments.

[0003]

The coating and developing system comprises various kinds of treatment units for carrying out series of treatments required for coating and development treatment of a wafer such as a resist coating treatment for coating a resist solution, a heat treatment for heating a wafer after completing exposing treatment, a cooling treatment for cooling the wafer after completing the heat treatment, and a development treatment for developing the wafer after completing the cooling treatment. A carrier unit carries wafers into, out of, and between the treatment units.

[0004]

[Problems to be Solved by the Invention]

The carrier unit however is not provided with a cooling apparatus for cooling a wafer. Therefore, there is a possibility that the amplification reaction of the pattern on the wafer proceeds, resulting in that the heat treatment is excessively performed. In this case, the deformation of the exposed pattern may deteriorate a yield rate.

[0005]

The present invention was made under the above circumstances, and an object thereof is to solve the above problems by providing a new treatment apparatus capable of instantly starting a cooling treatment of a heat-treated substrate so as to improve a yield rate.

[0006]

[Means for Solving the Problems]

In order to solve the above problems, the treatment apparatus according claim 1 comprises: a casing; a heating and mounting table, which is provided in the casing, capable of heating a substrate mounted thereon to a predetermined temperature; a hoisting and lowering member, which is provided on said heating and mounting table, capable of hoisting and lowering a substrate mounted thereon; and a cooling and mounting table, which is provided in the casing, capable of cooling a substrate mounted thereon to a predetermined

temperature, the cooling and mounting table being constructed so as to be capable of receiving the substrate mounted on the hoisting and lowering member.

[0007]

With this construction, a separately provided carrying means eliminates the necessity of a carrying process of a substrate from the heating and mounting table to the cooling and mounting table. Consequently, the cooling and mounting table can start the heat-treated substrate immediately after receiving the same. Therefore, excessive-heat treatment of the substrate can be prevented and deformation of the pattern can also be prevented, resulting in improvement of a yield rate.

[0008]

According to the present invention as set forth in 2, the treatment apparatus of claim 1 comprises: the casing having a substrate carrying-in opening and a substrate carrying-out opening for carrying a substrate into/out of the treatment apparatus, respectively; the heating and mounting table capable of mounting a substrate carried into the treatment apparatus from the substrate carrying-in opening; and the cooling and mounting table constructed so as to be capable of moving the substrate from the substrate carrying-in opening to a position where the substrate can be carried out of the treatment apparatus. This treatment apparatus may have the substrate carrying-in/out opening which serves as both a substrate carrying-in opening and a substrate carrying-out opening as the treatment apparatus as set forth in claim 3.

[0009]

With this construction, the heating and mounting table can receive a substrate immediately after completing exposing treatment and, moreover, the cooling and mounting table can move the substrate from the substrate carrying-out opening or the substrate carrying-in opening to a position where the substrate can be carried out of the treatment apparatus. Accordingly, the carrier unit can instantly receive the substrate from the cooling and mounting table.

[0010]

The present invention as set forth in claim 4 provides the treatment apparatus as set forth in any one of claims 1 to 3 comprising the cooling and mounting table in which



the notch section is formed in a manner not to touch the hoisting and lowering member.

[0011]

With this construction, the cooling and mounting table on the move does not touch the hoisting and lowering member. Accordingly, it is possible to use the cooling and mounting table having a large mounting face. Further, by use of the cooling and mounting table having the large mounting face to perform cooling treatment of the heat-treated substrate, the temperature distribution in the surface of the substrate can be made even. Consequently, the cooling treatment can be uniformly performed to the substrate. Further, the speedy cooling treatment of the wafer W is also possible by mounting the substrate under cooling treatment on the large mounting face.

[0012]

In the present invention as set forth in claim 5, the treatment apparatus as set forth in any one of claims 1 to 4 is provided with a cover for covering the heating and mounting table in the casing.

[0013]

According to the above structure, the heat generated on the heating and mounting table is intercepted by the cover so that the cooling and mounting table is not adversely affected by the heat generated on the heating and mounting table. Accordingly, the speedy cooling treatment of the substrate is possible. Alternatively,, the heating and mounting table is covered with a cover and the wafer W is positioned above the cover, which also enables the wafer W to be cooled.

[0014]

The present invention as set forth in claim 6 provides the treatment apparatus as set forth in any one of claims 1 to 5, wherein a member for intercepting a hot atmosphere is provided between the heating and mounting table and the cooling and mounting table.

[0015]

With this construction, heat generated on the heating and mounting table is intercepted by the member so that cooling and mounting table can be prevented from being affected by the heat generated on the heating and mounting table. Accordingly, the speedy cooling treatment of the heat-treated substrate is possible as the treatment

apparatus as set forth in claim 5. In this case, the substrate can be cooling-treated by intercepting the atmosphere between the heating and mounting table and the cooling and mounting table by the member for intercepting a hot atmosphere.

[0016]

The present invention as set forth in claim 7 provides the treatment apparatus as set forth in any one of claims 1 to 6, wherein a passage, in which a temperature-controlled fluid flows, is formed in the cooling and mounting table.

[0017]

With this construction, the temperature of the cooling and mounting table can be changed by the fluid flowing in the passage. Accordingly, the substrate can be cooled to a predetermined temperature easily on the cooling and mounting table.

[0018]

The present invention as set forth in claim 8 provides the treatment apparatus as set forth in any one of claims 1 to 6, wherein said cooling and mounting table is provided with Peltier elements.

[0019]

With this construction, by use of the Peltier elements, the substrate can be cooled to a predetermined temperature on the cooling and mounting table as in the treatment apparatus as set forth in claim 7. Further, the treatment apparatus of this construction can be made smaller and simpler than the treatment apparatus as set forth in claim 7 so that the structure of the cooling and mounting table, which makes it possible to move the substrate in the casing, can be realized easily.

[0020]

[Description of the Preferred Embodiment]

Hereinafter, embodiments of the present invention will be described with reference to accompanying drawings. In this embodiment, the treatment apparatus according to the present invention is realized as a heating/cooling treatment apparatus capable of carrying out a heating treatment and a cooling treatment of a wafer after a pattern thereon is exposed in a single apparatus. Figs. 1 and 2 are views showing the appearance of a coating and developing system provided with the heating/cooling treatment apparatus. Fig. 1 and

Fig. 2 are a plan view and a rear elevation, respectively.

[0021]

As shown in Fig. 1, the coating and developing system 1 has a configuration in which a cassette station 2, a process station 3 and an interface section 5 are united. In the cassette station 2, a plurality of wafers W per cassette C, for example, 25 wafers W are carried in the coating and developing system 1 from the outside and carried out of the coating and developing system 1 to the outside. In the process station 3, various kinds of treatment units are multi-tiered at designated positions and each treatment unit gives a predetermined treatment to the wafers W one by one. In the interface section 5, the wafers W are passed between the process station 3 and an aligner disposed adjacently to the process station 3.

[0022]

In the cassette station 2, a plurality of, for example, up to four cassettes C are mounted in a line in an X-direction (a vertical direction in Fig. 1), with the respective ways in/out for the wafers W opening to the process station 3 side at positioning projections 10a on a cassettes mounting table 10. A wafer carrier 11, which can move in the direction of the disposition of the cassette C (the X-direction) and in the direction of the disposition of the wafers W stored in the cassette C (a Z-direction; a vertical direction 9, is movable along a carrier path 12 to be selectively accessible to each cassette C. The wafer carrier 11 is also rotatable in a  $\theta$ -direction and accessible to an alignment unit (ALIM) and an extension unit (EXT) included in multi-tiered units of a third treatment unit group G3 on the process station 3 side as described later.

[0023]

In the process station 3, a carrier unit 20 is placed in a center portion thereof. The carrier unit 20 is provided with a plurality of, for example, three pin sets 21 for holding the wafers W in a vertical line. Around the carrier unit 20, one or various kinds of treatment units are multi-tiered to compose a treatment unit group. In the coating and developing system 1, four treatment unit groups G1, G2, G3, G4, and G5 can be arranged. The first and second treatment unit groups G1 and G2 are arranged on the front side of the coating and developing system 1, the third treatment group G3 is disposed adjacent

to the cassette station 2, and the fourth treatment unit group G4 and the fifth treatment unit group G5 are disposed adjacent to the interface section 5.

[0024]

In the first treatment unit group G1, two spinner-type treatment units for treating the wafer W on a spin chuck (not shown) in a cup CP, for example, a resist coating unit and a developing unit, are two-tiered from the bottom in order. Also in the second treatment unit group G2 similarly to the first treatment unit group G1, two spinner-type processing units, for example, the resist coating unit and a developing unit, are two-tiered from the bottom in order.

[0025]

In the third treatment unit group G3, as shown in Figs. 1 and 2.

As shown in Figs. 1 and 2, in the third treatment group G3, a unit for carrying out a predetermined treatments of the wafer W on a holding plate, for example, a cooling treatment unit (COL) for performing cooling treatment of the wafer W, an adhesion unit (AD) for improving fixing of the wafer W and resist, the extension unit (EXT) for keeping the wafer W on standby, a prebaking unit (PREBAKE) and a postbaking unit (POBAKE) performing heating treatment, and the like are, for example, seven-tiered.

[0026]

In the fourth and fifth treatment unit groups G4 and G5, as shown in Figs. 1 and 2, units for performing predetermined treatments of the wafer W on a holding table, for example, the cooling treatment unit (COL) for performing cooling treatment of the wafer W, the prebaking unit (PREBAKE), the post-baking unit (POBAKE) for performing heating treatment of the wafer W, and additionally a heating/cooling treatment apparatus 25 and the like, according to the embodiment of the present invention, are seven-tiered in total. When the coating and developing system 1 is seen from the rear, the fourth treatment unit group G4 and the fifth treatment unit group G5 overlap each other, therefore the fifth treatment unit group G5 is omitted in Fig. 2.

[0027]

The heating/cooling treatment apparatus 25 is provided with both a heating and mounting table 27 for heat treatment of a wafer W and a cooling and mounting table 28 for

cooling the wafer W in a casing 26. The respective heating and mounting tables 27 which belong to the fourth and fifth treatment unit groups G4 and G5 are faced to each other, thereby preventing the occurrence of heat interference between the heating/cooling treatment apparatuses 25 belonging to the fourth and fifth treatment unit groups G4 and G5.

[0028]

Further, the respective spinner-type treatment units included of the first and second treatment unit groups G1 and G2 and the cooling and mounting table 28 belonging to are arranged to be close to each other so as not to have an adverse thermal affect on the spinner-type treatment units which are prone to be affected by a change in temperature.

[0029]

At the center of the interface section 5, a wafer carrier 30 is provided. The wafer carrier 30 is movable in the X-direction along a rail 31 and the Z-direction (vertical direction) and rotatable in the  $\theta$ -direction to be accessible to the aligner 4, the respective heating and mounting tables 27 of the heating/cooling treatment apparatuses 25 belonging to the fourth and fifth treatment unit groups G4 and G5, and a peripheral aligner 32.

[0030]

The coating and developing system 1 is structured as described above. Next, the configuration of the heating/cooling treatment apparatus 25 provided in the coating and developing system 1 will be described hereinafter.

[0031]

As shown in Fig. 3, the plain configuration of the heating and mounting table 27 is formed into a round shape. The heating and mounting table 27 is held by a holding member 37. Inside the heating and mounting table 27, a heating mechanism (not shown) such as a heater is buried for heat-treating the wafer W and three holes (not shown) piercing from the top to the bottom are provided. In holes (not shown), three hoisting and lowering pins 38 for supporting the rear face of the wafer W are inserted respectively. The bottom end of each hoisting and lowering pin 38 is connected to a bracket 39, which vertically moves with a hoisting and lowering mechanism 40 driven by a motor 41. Accordingly, the wafer W supported by the hoisting and lowering pins 38 is vertically movable in a treatment chamber 42.

[0032]

The heating/cooling treatment apparatus 25 is provided with a cover 45 which has a shape covering the heating and mounting table 27, the cover 45 is provided with an exhaust duct 47. The holding member 37 is provided with an N<sub>2</sub> purge port 46 for blowing nitrogen gas (N<sub>2</sub> gas) into the treatment chamber 42. The N<sub>2</sub> purge port 46 may be provided in the cover 45. The cover 45 is vertically moved by the operation of an appropriate hoisting and lowering mechanism (not shown).

[0033]

The cooling and mounting table 28 has a smaller diameter than the wafer W and a circulation passage 52 is formed inside the cooling and mounting table 28. The circulation passage 52 is connected with a constant-temperature water supply source 53 for supplying, for example, constant-temperature water or the like which is temperature-controlled to 23°C. Unless the constant-temperature water is needed, tap water or the like can be supplied in the circulation passage 52.

[0034]

The cooling and mounting table 28 is connected to a moving means 55 by the medium of an attaching member 54 and is movable toward the heating and mounting table 27 by the movement of the moving means 55. The cooling and mounting table 28 may be vertically moved by a motor (not shown) or the like. In the cooling and mounting table 28, a notch section 60 is formed at the heating and mounting table 27 side as shown in Fig. 4. The notch section 60 is formed in a manner not to touch the hoisting and lowering pins 38.

[0035]

The heating/cooling treatment apparatus 25 according to the embodiment of the present invention is structured as has been described. Next, the effects of the heating/cooling treatment apparatus 25 will be explained hereinafter.

[0036]

The wafer W of which a predetermined exposing treatment is completed in the aligner 4 is carried into the heating and mounting table 27 of the heating/cooling treatment apparatus 25 belonging to the fourth treatment unit group G4 or the fifth treatment unit group G5 by the wafer carrier 30 to be treated with a predetermined heat-treatment.

[0037]

The wafer carrier 30 directly carries the exposed wafer W from the aligner 4 onto the heating and mounting table 27, therefore eliminating the need for a process of sending the wafer W from the wafer carrier 30 to the main carrier unit 20 as in conventional art. As a result, time for carrying the wafer W is shortened and through-put can be improved.

[0038]

Sequentially, as shown in Fig. 5, the wafer W of which a predetermined heat treatment is completed on the heating and mounting table 27 is moved up by the hoisting and lowering pins 38. Thereafter the cooling and mounting table 28 is moved toward the heating and mounting table 27 by the moving means 55. With the movement of the cooling and mounting table 28, the cover 45 is moved up by the appropriate hoisting and lowering mechanism (not shown), which allows the cooling and mounting table 28 to enter between the upper face of the heating and mounting table 27 and the lower face of the wafer W supported by the hoisting and lowering pins 38. When entering, the cooling and mounting table 28, having the notch section 60, does not touch the hoisting and lowering pins 38. Accordingly, the cooling and mounting table 28 can enter, as shown in Fig. 6, to the back side above the heating and mounting table 27. Thereafter, the hoisting and lowering pins 38 descend, as shown in Fig. 7, and the wafer W is mounted on the cooling and mounting table 28. From this point in time, cooling treatment is started to the wafer W.

[0039]

In the embodiment, the cooling and mounting table 28 does not touch the hoisting and lowering pins 38 due to the notch section 60. Therefore, the cooling and mounting table 28 can enter to the back side above the heating and mounting table 27, resulting in that a mounting face of the cooling and mounting table 28 can be made large. Consequently, the cooling treatment can be uniformly performed to the wafer W. Further, the speedy cooling treatment of the wafer W is also possible.

[0040]

Moreover, as aforementioned, the cooling treatment can be performed from the point in time when the wafer W is mounted on the cooling and mounting table 28 immediately after completing the heat treatment in the heating/cooling treatment apparatus 25.

Accordingly, deformation of the pattern can be prevented.

[0041]

When chemically-amplifying-type resist which is sensitive to change in temperature is used, the embodiment of the present invention is especially effective. The wafer W is rapidly cooling-treated to a temperature at which an amplifying reaction of resist does not proceed, for example, approximately 40°C on the cooling and mounting table 28.

[0042]

In addition, after the cooling and mounting table 28 on which the wafer W is mounted retreats from above the heating and mounting table 27 by the operation of the moving means 55 as shown in Fig. 8, the cover 45 descends. Except at the time of carrying the wafer W in/out, the heat generated on the heating and mounting table 27 is intercepted by the cover 45 not to spread outside. Also from this point, the required time for the cooling treatment is shortened.

[0043]

Sequentially, the cooling and mounting table 28 moves to the original predetermined position, performing the cooling treatment to the wafer W as shown in Fig. 9. During the movement, the wafer W is cooled to a predetermined temperature at which an amplifying reaction of resist does not proceed, for example, approximately 40°C. After the cooling and mounting table 28 moves to the predetermined position, a pair of tweezers 21 provided at the main carrier unit 20 receive the wafer W from the cooling and mounting table 28 as shown in Fig. 10 and support the wafer W as shown by a two-dotted line of the drawing. Thereafter, wafer W is carried into the developing unit by the main carrier unit 20 to be treated with a predetermined developing treatment.

[0044]

In the embodiment, the example in which the heat generated on the heating and mounting table 27 is intercepted by the cover 45 has been explained. The present invention, however, is not limited to the example, a member which intercepts the spread of a heat atmosphere such as a heat insulating material may be vertically movable, for example, between the heating and mounting table 27 and the cooling and mounting table 28.



[0045]

According to the above structure, the heat generated on the heating and mounting table 27, intercepted by the insulating material, does not spread in the casing 26, thereby avoiding heat interference between the heating and mounting table 27 and the cooling and mounting table 28. Consequently, the cooling and mounting table 28 is not adversely affected by the heat generated on the heating and mounting table 27 similarly to the case of using the cover 45. Alternatively, the heating and mounting table 27 is covered with a cover and the wafer W is positioned above the cover, which also enables the wafer W to be cooled.

[0046]

The cooling and mounting table 28 cools the wafer W with the constant-temperature water which flows in the circulation passage 52. In the present invention, however, the cooling and mounting table 28 is only for cooling the wafer W to a predetermined temperature, therefore gas such as nitrogen gas or air which is controlled in temperature may flow in the circulation passage 52, for example.

[0047]

In the aforementioned embodiment, the diameter of the cooling and mounting table 28 is smaller than that of the wafer W. Instead of that, a cooling and mounting table having a larger diameter than the wafer W and/or including hoisting and lowering pins can be employed. According to the present invention in the above cooling and mounting table, the wafer can be sent /received in the same manner as the heating and mounting table.

[0048]

Furthermore, Peltier elements may be provided at the cooling and mounting table 28 instead of the circulation passage 52. The above structure enables the cooling and mounting table 28 to be made further smaller and simpler. Consequently, the movable structure of the cooling and mounting table can be realized easily.

Moreover, the example where the wafer W is used for a substrate has been described and the present invention, not limited to the example, can also be employed in the case where an LCD substrate is used.

[0049]

[Advantages of the Invention]

According to the present invention as set forth ins 1 to 8, the casing is provided with the heating and mounting table and the cooling and mounting table therein so that a substrate to be cooling-treated can be mounted on the cooling and mounting table immediately after completing heat treatment. Consequently, the substrate is not heat-treated excessively as in the conventional treatment apparatus, resulting in improvement of a yield rate.

[0050]

In particular, According to the present invention as set forth ins 2 and 3, the heating and mounting table can receive a substrate immediately after completing exposing treatment from the substrate carrying-in opening or the substrate carrying-in/out opening. Further, the separately provided carrying means can receive the substrate immediately from the cooling and mounting table via the substrate carrying-out opening or substrate carrying-in/out opening.

[0051]

According to the present invention as set forth in 4, since the notch section is formed in a manner not to touch the hoisting and lowering member, the cooling and mounting table having a large mounting face can be used. Consequently, the cooling treatment can be uniformly performed to the substrate and the speedy cooling treatment of the substrate is also possible by using the cooling and mounting table having a large mounting face.

[0052]

According to the present invention as set forth ins 5 and 6, since the cooling and mounting table is scarcely affected by heat generated on the heating and mounting table, cooling treatment of a substrate can be performed optimally.

[0053]

According to the present invention as set forth ins 7 and 8, a substrate mounted on the cooling and mounting table immediately after completing heat treatment can be cooled to a predetermined temperature by changing a temperature of the cooling and mounting table.

[0054]

According to the present invention as set forth in 8, since a substrate is cooled by the Peltier elements, the structure of the cooling and mounting table can be made smaller and simpler than the cooling and mounting table in claim 7. Accordingly, the movable structure of the cooling and mounting table can be realized easily.

#### [Brief Description of the Drawings]

[Fig. 1]

An explanatory view of a coating and developing system having a heating/cooling treatment apparatus according to an embodiment of the present invention.

[Fig. 2]

A rear view of the coating and developing system shown of Fig. 1.

[Fig. 3]

A vertical sectional view of the heating/cooling treatment apparatus according to another embodiment of the present invention.

[Fig. 4]

An explanatory view of the heating/cooling treatment apparatus shown in Fig. 3 seen from the plane.

[Fig. 5]

An explanatory view showing a manner of the movement of a cooling and mounting table provided in the heating/cooling treatment apparatus of Fig. 3.

[Fig. 6]

An explanatory view showing an aspect of the heating/cooling treatment apparatus in the state of Fig. 5 seen from the plane.

[Fig. 7]

An explanatory view showing a manner that the cooling and mounting table in Fig. 6 receives a wafer supported by hoisting and lowering pins.

[Fig. 8]

An explanatory view showing a manner that the cooling and mounting table which has received a wafer recedes from a heating and mounting table.

[Fig. 9]

An explanatory view showing an aspect of the heating/cooling treatment apparatus in the state of Fig. 8 seen from the plane.

[Fig. 10]

An explanatory view showing an aspect when the wafer mounted on the cooling and mounting table of Fig. 9 is delivered to a pair of tweezers.

[Reference Characters]

- 1: Coating and developing system
- 4: Aligner
- 20: Carrier unit
- 25: Heating/cooling treatment apparatus
- 27: Heating and mounting table
- 28: Cooling and mounting table
- 30: Wafer carrier
- 45: Cover
- 52: Circulation passage
- 60: Notch section
- C: Cassette
- W: Wafer